

ANNEX I.

BRIEF DICTIONARY OF IP AND SB

TERMS FOR SCIENTISTS AND LAWYERS, RESPECTIVELY

DICTIONARY OF LEGAL TERMS FOR BIOLOGISTS¹

- **Appeal:** to challenge a decision taken by a Patent Office, such as a decision to refuse to protect the technology or the invention subject of a patent application.
- **Applicant:** natural person or legal person applying for the granting of an Industrial Property Right (e.g., patents or trademarks).
- **Application** (of an Industrial Property Right): a request filed by an Applicant or by the Applicant's agent on its behalf for the granting of an Industrial Property Right.
- **Availability to the Public:** to give to the public the information of the registered invention.
- **Board of Appeal:** Body responsible for examining appeals against decisions taken by the relevant Patent Office.
- **Claims:** the main part of a patent document which defines the scope of the technology/invention's protection. Also, it could refer to a lawsuit against counterparties.
- **Classification:** in patents, it means a specific system which subdivides the relevant technology into different subcategories. Each subcategory classifies a patented invention depending on its technical

characteristics. It also applies for other industrial property rights like trademarks.

- **Description of the Invention/Technology:** it is one of the essential parts of patent documents that helps the claims to define the scope of protection. It includes a summary of the invention, its technical field, the technology's background and the essential features of the invention with reference to relevant drawings.
- **Disclosure:** to reveal to the public the contents of an invention claimed. To be valid for purposes requesting protection under a patent law, such a disclosure must be made in a manner sufficiently clear and complete for the invention to be carried out by a person knowledgeable in the field.
- **Examination:** related to patents means to see whether the application complies with the patentability or registrability requirements of the industrial property law. The examiner who is an industrial property law authority performs this job.
- **File:** it means the totality of documents pertaining to a given patent application or granted patent.
- **Industrial Design:** it is a type of industrial property protection which protects the visual aspect of an object, including its two-dimensional and three-dimensional features of shape and surface.

¹ *Glossary of terms concerning industrial property information and documentation*. Handbook on industrial property. Information and Documentation. WIPO (June 2013).

- **Industrial Property:** type of intellectual property that protects industrial application inventions granting rights such as patents, trademarks, designs, mask works and plant breeders.
- **Infringement:** violation of an exclusive industrial property right by selling or using a patented product or process without the permission of the right's owner.
- **Intellectual Property:** creation of the mind. It is divided into two categories: (i) industrial property, which includes patents, trademarks, industrial designs, and (ii) copyright, which includes literary and artistic works such as novels, poems and plays, films, musical works, artistic works such as drawings, paintings, photographs and sculptures, and architectural designs, amongst others.
- **Invention:** new product, process or machinery or any new use thereof. It must fulfil some essential requirements to be patentable.
- **Inventor's Certificate:** a document similar to an invention disclosure form that exists in several countries, which function is to acknowledge the authorship of an invention to its inventor(s), disregarding patents.
- **Inventive Step:** one of the requirements that an invention must match in order to be patentable. It means that considering the invention's state of the art, the invention is not obvious (see Obviousness) to a person skilled in the art.
- **Know-how:** it is a transferable right which consists on the knowledge of a particular person regarding non disclosed and valuable industrial information that can be of economic, financial, technical and/or organizational nature. It is limited accessible, usable and exploitable and is deemed to have protection until it becomes part of the public domain.
- **Licensing:** consists on granting the right to exploit a patent application or a patent by the licensor to a licensee.
- **Litigation:** an action brought in court to enforce a particular right.
- **Novelty:** a condition for patentability in all the jurisdictions. An invention is new if it does not form part of the State of the Art, that is, the invention was not available to the public, in any form, before the filing of the patent application.
- **Obviousness:** a characteristic of an invention which means that if a person with ordinary skill in the relevant field of technology can deduce it from publicly available information (prior art), then it does not meet the conditions for patentability.
- **Official Gazette:** official bulleting or journal published by Patent Offices, which records information on the procedural steps taken in respect of concrete industrial property rights, as well as on official communications of the office, the changes of the current industrial property laws, or the legal status of patent documents, etc. They usually give information regarding at the status of a concrete invention.
- **Paris Convention:** is the basic international convention held in Paris in 1883 in the field of industrial property, adhered by over 100 States. Its aim is to warrant the same kind of protection for all the contracting States.
- **Patent:** it is a title of legal protection of an invention issued, upon application and subject to meeting legal criteria, by a government office. The rights conferred by a patent are the rights to prevent others from making, using, selling, offering for sale or importing a product, a process, or a product obtained by a (patented) process.
- **Patent Family:** it is the collection of different patent documents relating to the same invention or several inventions sharing a common aspect that are published at different times in the same country or published in different countries or regions.
- **Patentee:** the owner of the patent, who has the right to exploit it, directly or indirectly, through others.

- **Person skilled in the art:** Someone with knowledge and experience in the technical field of the invention. He or she is a fiction person who serves as a reference to examine if the invention is patentable or not according to its knowledge and experience.
- **Plant Breeder's Rights:** it offers legal protection to "breeders" or plant producers of new varieties of plants.
- **Priority Application:** Article 4 of the Paris Convention allows to apply for a "priority" patent in a particular territory and then to file a foreign patent application in other territories claiming the same date as the one given for the priority patent within 1 year from the priority application.
- **Publication:** in patents, it means making available the contents of a document to the public, usually at the Official Gazette.
- **Refusal:** Decision of not granting a patent application because it does not fulfil the necessary / essential requirements.
- **Register** (of Industrial Property Rights): Register kept by an industrial property office in which is recorded the legal status of different industrial property rights. Usually, the office keeps separately a patent register, a trademark register and an industrial design register.
- **State of the Art:** it means the knowledge of a particular technical field available or disclosed to the public in a particular period of time, in a particular territory.
- **Term:** Maximum period for which a patent can be legally valid.
- **Trade Mark:** also known as mark. It is a sign that serves to identify the goods and the services of an industrial or a commercial enterprise or a group of such enterprises from the goods and the services of others persons. It may consist on a character, a drawing, colours or combination of them.
- **Utility Model:** a right addressed to protect minor inventions upon application, in accordance with requirements somewhat less strict than those for obtaining patent protection and to a lesser extent. The rights conferred by this title are similar to the patent rights.
- **WIPO** (World Intellectual Property Organization): Specialized agency of the United Nations (UN), which aims are to protect and grant cooperation upon intellectual property rights. It provides a global policy forum where governments, intergovernmental organizations, industry groups and civil society come together to address developing IP issues.

DICTIONARY OF SYNBIO TERMS FOR LAWYERS

- **Antibiotic:** an antibiotic or antimicrobial is a compound or molecule that kills (**microbicide/microbiolytic**) or inhibits (**microbiostatic**) the growth of a microorganism. There are several modes of action. For example, some antibiotics interfere with the bacterial wall (the most external part of the bacteria) synthesis, and it generates holes on its surface so the bacteria die; other antibiotic are protein synthesis inhibitors, which result in no growth (no old structures replacement).
 - **Antibiotic resistance:** some microorganisms have either mechanisms that allow them to overcome the antibiotic effect. Those microbes are naturally resistant so they can grow in the presence of those agents. Others, by contrast, are originally sensitive but become resistance through the incorporation of certain DNA sequences (**genes of resistance**). Antibiotic resistance is widely used in molecular biology to select cells with characteristics of interest (like a **BioBrick**). This is done by placing in a same genetic element (plasmid) the gene of interest and a gene conferring the resistance to the antibiotic. Using that particular antibiotic (which is linked to the gene of interest) makes possible to be sure that the gene of interest is there.
 - **Antisepsis:** methods or procedures that prevent the microorganisms development usually by killing them (antiseptic compounds refers to compounds used only on the body surface).
 - **Asepsis:** working procedures that avoid the surrounding environmental microorganisms entering to the working area.
 - **BioBrick:** DNA sequence that presents, at the ends, known restriction sites (**prefix** and **suffix**) that allow using **BioBricks** as standard interchangeable parts (you can cut and paste them into the vector of your choice, as a Lego piece) with a view to more easily build and engineer biological systems.
 - **Biological chassis:** In the frame of **Synthetic Biology**, a biological chassis would be understood as the biological system (bacteria, yeast...), as simple as possible, that serves as a basic architecture on which further bioengineering is possible.
 - **Biotechnology:** science that uses organisms or their metabolic products to get either a development, a tool or a procedure that is useful for any application (research, medical applications, industry...).
 - **Clone** (verb): process of cutting, purifying and pasting fragments of DNA (such as **BioBricks**) from one vector to another (among plasmids, for example).
 - **Competent cell:** cell that is able to take up foreign DNA (from outside the cell). This process, essential in molecular biology, allows to introduce fragments of DNA of interest (genes, promoters...) into a biological chassis (the host competent cell). Here, it is necessary to differentiate between two different concepts: natural/induced competency and **chemiocompetent/electrocompetent** cells. The former refers to the genetically encoded ability of some organisms for taking up the extracellular DNA. The latter refers to the process needed for cells to incorporate the surrounding DNA: a heat shock (**chemiocompetents**) or a high voltage pulse (**electrocompetents**). In both cases, DNA can enter the cells.
- There are three main ways to transform a cell or, in other words, to introduce DNA into it:
- ✚ **Transformation:** the DNA is taken from the environment as explained above.
 - ✚ **Conjugation:** This process requires two cells, a donor and an acceptor one. The donor has a plasmid with the information for sexual pili synthesis, a bridge that will allow the

movement of DNA among the two bacteria through that physical channel.

✚ **Transfection:** viruses act like vectors. A cell is infected by a virus and in the process some fragments of DNA are introduced into the bacterial chromosome.

- **Electrophoresis:** technique where DNA is forced to move through a physical network following an electric field. As the DNA is negatively charged it will move from the negative pole to the positive one in such a way that the DNA molecules will be separated by their size (the molecules have to move into the agar network). DNA fragments can be visualized because of an added agent that inserts itself into the DNA molecule and producing fluorescence under ultraviolet light.
- **Genetic Engineering:** set of techniques for DNA incorporation to an organism, to become a Genetically Modified Organism or GMO. The origin of this DNA can be an organism from the same species (**cisgenesis**) or from a different one (**transgenesis**).
- **Genotype:** set of genes from an organism. Based on the information obtained from the genotype the organism's potential features can be determined (what the organism could be).
- **Glycerinate (or cryotubes):** method for microorganisms storage based on cryopreservation – stocking at -20°C or -80°C – using glycerol as protecting agent (when water solidifies it forms crystals that can break the cells, by adding glycerol the damage is reduced due to the limited number of water crystals formed).
- **Medium (in microbiology):** set of nutrients (carbon, nitrogen, sulphur...) needed for the correct development, growth and division of cells (bacteria, yeast, human cells...). The media can be liquid or solid (agar added). It can be also supplemented for specific microbial requirements (a specific compound can be

required for a microorganism growth) or for selecting some interesting characteristics

- **Microbial Culture:** methodology used for microbial growth (cell multiplication in a culture medium) under controlled lab conditions. The conditions in which the cells are cultured depends on the kind of cell we are working with (one cannot culture human cells in the same way one would with bacteria) .
- **Miniprep:** technique for plasmid extraction from a microbial culture.
- **Model organism:** organism that due to its short generation time, accessibility for working with (you could hardly work with a group of elephants in a molecular biology laboratory, for example), and well as characterization level of its genome and biology, is used for the study and characterization of different biological phenomenon (disease, traits...) and serves as a paradigm from comparative purposes with other species. Some model organisms are: the fly *Drosophila melanogaster*, the worm *Caenorhabditis elegans*, the toad *Xenopus laevis*, the bread yeast *Saccharomyces cerevisiae* and the bacterium *Escherichia coli*, among others.
- **Modelling:** mathematical description of a biological system.
- **Phenotype:** observable characteristics of an organism (eye colour, for example). The phenotype of an organism is the result of the genetic background of the organism (the **genotype**) and the environmental conditions.
- **Plasmid:** circular DNA molecule. This molecule is separated and replicates independently from the chromosome (autonomous regulation). The most remarkable parts in a plasmid are: the **multicloning site** (plasmid region where a high number of restriction sequences can be found, in such a way that it makes possible to clone DNA fragments with different ends), the **replication origin** (dictates the number of plasmid copies in the cell; based on this the

plasmids can be classified as high, medium and low copy number) and the **resistance cassette** (it makes possible the selection of cells transform with the plasmid). There are two main kinds of plasmids according to the objective: **expression plasmids** (these plasmids are designed for the expression of cloned sequences, in other words, to produce proteins) and **cloning plasmids** (these plasmids allow the amplification and maintenance of a sequence of interest).

- **Promoter:** DNA sequences where the transcription (first step of a gene expression) of a gene is started. The promoter also dictates when and under which conditions, the gene is controls is expressed (stress,, the presence of activator molecules, etc).
- **Protein:** biological molecules whose basic units are the aminoacids. Proteins perform an array of functions in living organisms. The **enzymes** are proteins that catalyse biochemical reactions and are widely used in molecular biology. Some examples of these enzymes are the **ligase** (enzyme that catalyses the joining of two DNA molecules as long as they present cohesive ends); the **polymerase** (enzyme able to synthetize DNA from its basic elements and widely used in the lab in the multiple DNA copy process called PCR); and the **restriction enzymes** (enzymes able to cut DNA at specific sequences generating specific ends that will make possible the later joining with other molecule with equal ends).
- **Reporter gene:** gene whose output is easily measurable (fluorescence, for example).
- **Sterility:** process of eliminationg all life forms, including bacterial spores (the most resistant living forms known).
- **Synthetic Biology:** interdisciplinary framework whose goal is the construction and design of biological devices and systems thought the application of the engineering principles to the field of biology. It is an engineering view on biotechnology.

- **Terminator:** DNA sequence that marks the end of a concrete gene.
- **Vector:** vehicle used to transfer genetic material, DNA, to a cell. A vector described previously would be a **plasmid**, for example.
- **Viable non-cultivable cells:** under certain non-favourable conditions (strong stresses, for example) some cells are alive but yet do not grow in the artificial media used in microbiology.